ABSTRACT OF THE DISCLOSURE

A method and apparatus are provided for automatically training or modifying one or more models of acoustic units in a speech recognition system. Acoustic models are modified based on information about a particular application with which the speech recognizer is used, including speech segment alignment data for at least one correct alignment and at least one wrong alignment. The correct alignment correctly represents a phrase that the speaker uttered. The wrong alignment represents a phrase that the speech recognition system recognized that is incorrect. The segment alignment data is compared by segment to identify competing segments and those that induced the recognition error. When an erroneous segment is identified, acoustic models of the phoneme in the correct alignment are modified by moving their mean values closer to the segment's acoustic features. Concurrently, acoustic models of the phoneme in the wrong alignment are modified by moving their mean values further from the acoustic features of the segment of the wrong alignment. As a result, the acoustic models will converge to more optimal values based on empirical utterance data representing recognition errors.

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